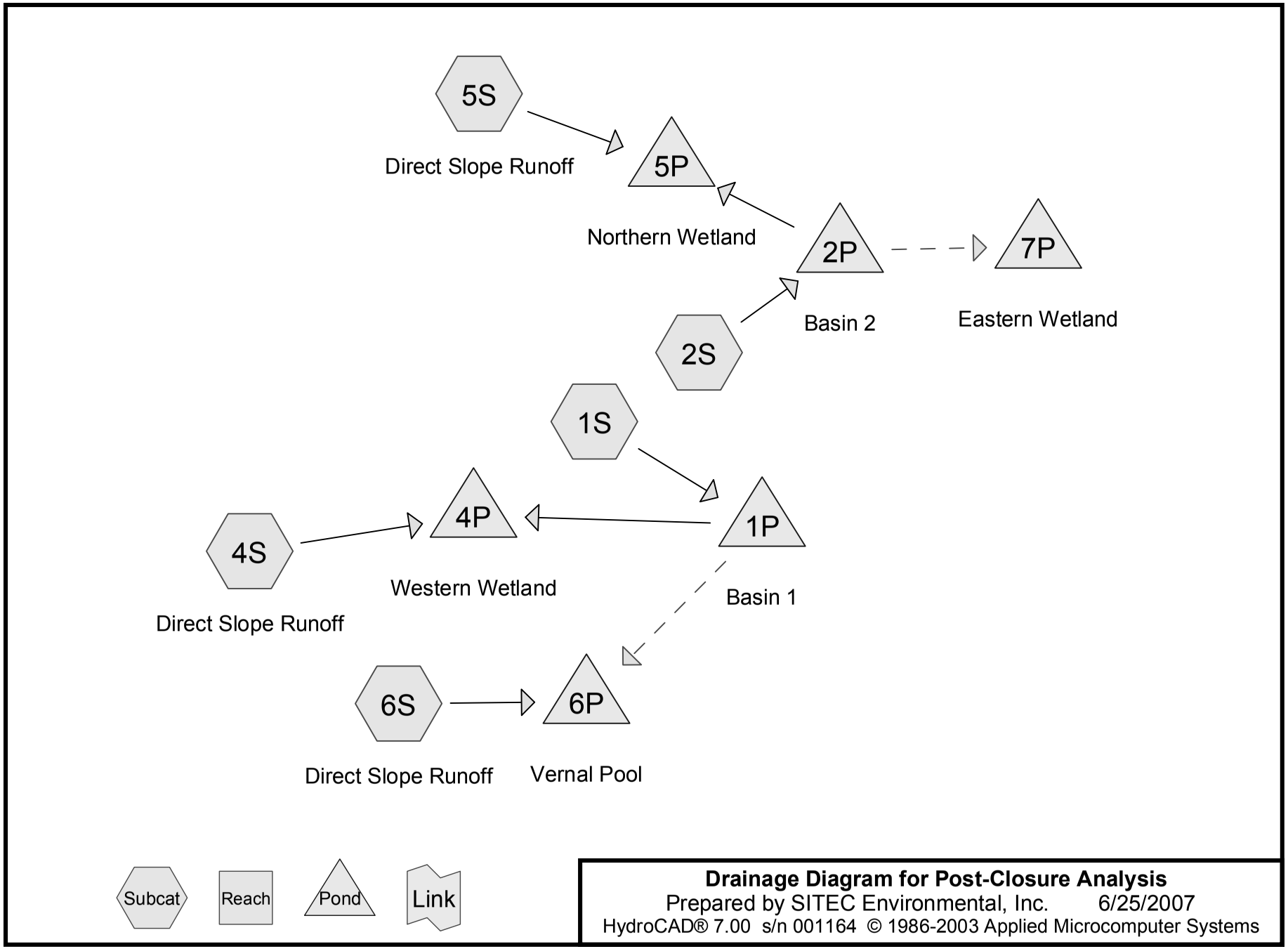
Revised Post-Closure Stormwater Calculations & Summary Tables



Drainage Diagram for Post-Closure Analysis
Prepared by SITEC Environmental, Inc. 6/25/2007

Table 1
Peak Flows from Site, cfs

Study Location		*2-Year Storm (3.10")*	*10-Year Storm (4.50")*	*25-Year Storm (5.40")*	*50-Year Storm (6.00")*	*100-Year Storm (6.40")*
Existing Conditions	Western Wetland	0.09	1.68	4.62	7.04	8.80
	Northern Wetland	0.06	1.15	3.18	4.84	6.05
	Vernal Pool	0.04	0.83	2.29	3.48	4.35
	Eastern Wetland	0.03	0.46	1.26	1.92	2.40
Post Closure	Western Wetland	0.49	1.93	3.11	3.97	4.57
	Northern Wetland	0.46	0.96	1.37	1.88	2.67
	Vernal Pool	0.03	0.13	0.21	0.27	0.31
	Eastern Wetland	0.00	0.22	0.92	1.39	1.78

Table 2
Peak Volumes to Vernal Pool, ac.-ft.

	2-Year Storm (3.10")	*10-Year Storm (4.50")*	*25-Year Storm (5.40")*	*50-Year Storm (6.00")*	*100-Year Storm (6.40")*
Existing Conditions	0.020	0.113	0.203	0.274	0.325
Post Closure	0.005	0.026	0.119	0.145	0.186

Table 3

Detention Pond Routing Characteristics

	2-Year Storm (3.10")	*10-Year Storm (4.50")*	*25-Year Storm (5.40")*	*50-Year Storm (6.00")*	*100-Year Storm (6.40")*
Detention Pond 1 (Western Wetland & Vernal Pool)					
Peak Inflow, cfs	14.82	22.58	27.52	30.80	32.98
Peak Outflow, cfs	0.11	0.15	0.26	0.70	1.17
Attenuation	99%	99%	99%	98%	96%
Peak Elevation,ft	48.39	50.11	51.07	51.28	51.41
Freeboard, ft	10.61	8.89	7.93	7.72	7.59
Detention Pond 2 (Northern Wetland & Eastern Wetland)					
Peak Inflow, cfs	20.83	31.68	38.58	43.16	46.21
Peak Outflow, cfs	0.40	0.71	1.92	3.11	4.21
Attenuation	98%	98%	95%	93%	91%
Peak Elevation,ft	50.98	52.43	52.88	53.11	53.29
Freeboard, ft	6.02	4.57	4.12	3.89	3.71

Subcatchment 1S:

Runoff = 14.82 cfs @ 12.24 hrs, Volume= 1.559 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
333,035	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.1200	0.2		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.10"
0.2	75	0.1200	5.6		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
14.0					**Direct Entry, Swale Concentrated Flow--2fps**
18.3	125	Total			

Subcatchment 2S:

Runoff = 20.83 cfs @ 12.08 hrs, Volume= 1.521 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
324,842	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.2100	0.3		**Sheet Flow, Sheet Flow** n= 0.240 P2= 3.10"
0.6	250	0.2100	7.4		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
1.7					**Direct Entry, Concentrated Flow--2 fps**
5.6	300	Total			

Subcatchment 4S: Direct Slope Runoff

Runoff = 0.42 cfs @ 12.21 hrs, Volume= 0.065 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
91,175	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 5S: Direct Slope Runoff

Runoff = 0.13 cfs @ 12.21 hrs, Volume= 0.020 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
28,200	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 6S: Direct Slope Runoff

Runoff = 0.03 cfs @ 12.21 hrs, Volume= 0.005 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
6,395	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Pond 1P: Basin 1

Inflow Area = 7.645 ac, Inflow Depth = 2.45" for 2-Year Storm Event event
Inflow = 14.82 cfs @ 12.24 hrs, Volume= 1.559 af
Outflow = 0.11 cfs @ 24.25 hrs, Volume= 0.509 af, Atten= 99%, Lag= 720.3 min
Primary = 0.11 cfs @ 24.25 hrs, Volume= 0.509 af
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 48.39' @ 24.25 hrs Surf.Area= 20,389 sf Storage= 62,944 cf
Plug-Flow detention time= 1,796.7 min calculated for 0.509 af (33% of inflow)
Center-of-Mass det. time= 1,654.8 min (2,454.4 - 799.6)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	**Custom Stage Data (Pyramidal)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
45.00	16,386	0	0	16,386
46.00	17,709	17,043	17,043	17,808
48.00	19,930	37,617	54,660	20,285
50.00	22,268	42,176	96,837	22,896
52.00	24,725	46,972	143,808	25,642
54.00	27,303	52,007	195,815	28,525
56.00	29,994	57,276	253,091	31,537
58.00	32,986	62,956	316,047	34,848
59.00	34,605	33,792	349,840	36,627

#	Routing	Invert	Outlet Devices
1	Device 4	52.50'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
2	Device 4	51.00'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Device 4	45.00'	**1.5" Vert. Orifice/Grate** C= 0.600
4	Primary	42.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 41.75' S= 0.0025 '/' n= 0.013 Cc= 0.900
5	Secondary	49.80'	**1.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	51.20'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.11 cfs @ 24.25 hrs HW=48.39' (Free Discharge)
└**4=Culvert** (Passes 0.11 cfs of 27.73 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  ├**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.11 cfs @ 8.8 fps)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=45.00' (Free Discharge)
├**5=Orifice/Grate** (Controls 0.00 cfs)
└**6=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Basin 2

Inflow Area = 7.457 ac, Inflow Depth = 2.45" for 2-Year Storm Event event
Inflow = 20.83 cfs @ 12.08 hrs, Volume= 1.521 af
Outflow = 0.40 cfs @ 17.70 hrs, Volume= 1.409 af, Atten= 98%, Lag= 337.5 min
Primary = 0.40 cfs @ 17.70 hrs, Volume= 1.409 af
Secondary = 0.00 cfs @ 17.70 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf
Peak Elev= 50.98' @ 17.70 hrs Surf.Area= 18,553 sf Storage= 93,899 cf (50,506 cf above start)
Plug-Flow detention time= 2,762.3 min calculated for 0.413 af (27% of inflow)
Center-of-Mass det. time= 1,351.2 min (2,139.0 - 787.8)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	12,977	0	0
47.00	14,759	27,736	27,736
49.00	16,555	31,314	59,050
51.00	18,569	35,124	94,174
53.00	20,363	38,932	133,106
55.00	22,206	42,569	175,675

#	Routing	Invert	Outlet Devices
1	Device 3	48.00'	**3.0" Vert. Orifice/Grate** C= 0.600
2	Device 3	52.60'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Primary	45.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 44.00' S= 0.0100 '/' n= 0.012 Cc= 0.900
4	Device 3	54.00'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
5	Secondary	50.95'	**2.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	52.25'	**6.0" Vert. Orifice/Grate** C= 0.600
7	Secondary	52.60'	**6.0" Vert. Orifice/Grate** C= 0.600
8	Secondary	53.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.40 cfs @ 17.70 hrs HW=50.98' (Free Discharge)
- **3=Culvert** (Passes 0.40 cfs of 26.66 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 0.40 cfs @ 8.1 fps)
  - **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 17.70 hrs HW=50.98' (Free Discharge)
- **5=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.6 fps)
- **6=Orifice/Grate** (Controls 0.00 cfs)
- **7=Orifice/Grate** (Controls 0.00 cfs)
- **8=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 0.71" for 2-Year Storm Event event
Inflow = 0.49 cfs @ 12.23 hrs, Volume= 0.574 af
Primary = 0.49 cfs @ 12.23 hrs, Volume= 0.574 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 5P: Northern Wetland

Inflow Area = 8.105 ac, Inflow Depth = 2.12" for 2-Year Storm Event event
Inflow = 0.46 cfs @ 12.37 hrs, Volume= 1.429 af
Primary = 0.46 cfs @ 12.37 hrs, Volume= 1.429 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 0.37" for 2-Year Storm Event event
Inflow = 0.03 cfs @ 12.21 hrs, Volume= 0.005 af
Primary = 0.03 cfs @ 12.21 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 7P: Eastern Wetland

Inflow = 0.00 cfs @ 17.70 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 17.70 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Subcatchment 1S:

Runoff = 22.58 cfs @ 12.24 hrs, Volume= 2.431 af, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Storm Event Rainfall=4.50"

Area (sf)	CN	Description
333,035	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.1200	0.2		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.10"
0.2	75	0.1200	5.6		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
14.0					**Direct Entry, Swale Concentrated Flow--2fps**
18.3	125	Total			

Subcatchment 2S:

Runoff = 31.68 cfs @ 12.08 hrs, Volume= 2.371 af, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Storm Event Rainfall=4.50"

Area (sf)	CN	Description
324,842	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.2100	0.3		**Sheet Flow, Sheet Flow** n= 0.240 P2= 3.10"
0.6	250	0.2100	7.4		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
1.7					**Direct Entry, Concentrated Flow--2 fps**
5.6	300	Total			

Subcatchment 4S: Direct Slope Runoff

Runoff = 1.85 cfs @ 12.16 hrs, Volume= 0.178 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Storm Event Rainfall=4.50"

Area (sf)	CN	Description
91,175	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 5S: Direct Slope Runoff

Runoff = 0.57 cfs @ 12.16 hrs, Volume= 0.055 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Storm Event Rainfall=4.50"

Area (sf)	CN	Description
28,200	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 6S: Direct Slope Runoff

Runoff = 0.13 cfs @ 12.16 hrs, Volume= 0.012 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Storm Event Rainfall=4.50"

Area (sf)	CN	Description
6,395	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Pond 1P: Basin 1

Inflow Area = 7.645 ac, Inflow Depth = 3.82" for 10-Year Storm Event event
Inflow = 22.58 cfs @ 12.24 hrs, Volume= 2.431 af
Outflow = 0.15 cfs @ 24.26 hrs, Volume= 0.653 af, Atten= 99%, Lag= 721.2 min
Primary = 0.13 cfs @ 24.26 hrs, Volume= 0.639 af
Secondary = 0.01 cfs @ 24.26 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 50.11' @ 24.26 hrs Surf.Area= 22,399 sf Storage= 99,335 cf
Plug-Flow detention time= 1,815.1 min calculated for 0.653 af (27% of inflow)
Center-of-Mass det. time= 1,644.7 min (2,432.7 - 787.9)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	**Custom Stage Data (Pyramidal)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
45.00	16,386	0	0	16,386
46.00	17,709	17,043	17,043	17,808
48.00	19,930	37,617	54,660	20,285
50.00	22,268	42,176	96,837	22,896
52.00	24,725	46,972	143,808	25,642
54.00	27,303	52,007	195,815	28,525
56.00	29,994	57,276	253,091	31,537
58.00	32,986	62,956	316,047	34,848
59.00	34,605	33,792	349,840	36,627

#	Routing	Invert	Outlet Devices
1	Device 4	52.50'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
2	Device 4	51.00'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Device 4	45.00'	**1.5" Vert. Orifice/Grate** C= 0.600
4	Primary	42.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 41.75' S= 0.0025 '/' n= 0.013 Cc= 0.900
5	Secondary	49.80'	**1.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	51.20'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.13 cfs @ 24.26 hrs HW=50.11' (Free Discharge)
└**4=Culvert** (Passes 0.13 cfs of 31.84 cfs potential flow)
  └**1=Orifice/Grate** (Controls 0.00 cfs)
  └**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.13 cfs @ 10.8 fps)

Secondary OutFlow Max=0.01 cfs @ 24.26 hrs HW=50.11' (Free Discharge)
└**5=Orifice/Grate** (Orifice Controls 0.01 cfs @ 2.5 fps)
└**6=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Basin 2

Inflow Area = 7.457 ac, Inflow Depth = 3.82" for 10-Year Storm Event event
Inflow = 31.68 cfs @ 12.08 hrs, Volume= 2.371 af
Outflow = 0.71 cfs @ 17.00 hrs, Volume= 2.082 af, Atten= 98%, Lag= 295.4 min
Primary = 0.49 cfs @ 17.00 hrs, Volume= 1.865 af
Secondary = 0.22 cfs @ 17.00 hrs, Volume= 0.218 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf
Peak Elev= 52.43' @ 17.00 hrs Surf.Area= 19,852 sf Storage= 122,019 cf (78,626 cf above start)
Plug-Flow detention time= 2,266.0 min calculated for 1.086 af (46% of inflow)
Center-of-Mass det. time= 1,335.7 min (2,111.9 - 776.1)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	12,977	0	0
47.00	14,759	27,736	27,736
49.00	16,555	31,314	59,050
51.00	18,569	35,124	94,174
53.00	20,363	38,932	133,106
55.00	22,206	42,569	175,675

#	Routing	Invert	Outlet Devices
1	Device 3	48.00'	**3.0" Vert. Orifice/Grate** C= 0.600
2	Device 3	52.60'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Primary	45.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 44.00' S= 0.0100 '/' n= 0.012 Cc= 0.900
4	Device 3	54.00'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
5	Secondary	50.95'	**2.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	52.25'	**6.0" Vert. Orifice/Grate** C= 0.600
7	Secondary	52.60'	**6.0" Vert. Orifice/Grate** C= 0.600
8	Secondary	53.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.49 cfs @ 17.00 hrs HW=52.43' (Free Discharge)
- **3=Culvert** (Passes 0.49 cfs of 30.28 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 0.49 cfs @ 10.0 fps)
  - **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.22 cfs @ 17.00 hrs HW=52.43' (Free Discharge)
- **5=Orifice/Grate** (Orifice Controls 0.12 cfs @ 5.7 fps)
- **6=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.4 fps)
- **7=Orifice/Grate** (Controls 0.00 cfs)
- **8=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 1.01" for 10-Year Storm Event event
Inflow = 1.93 cfs @ 12.16 hrs, Volume= 0.817 af
Primary = 1.93 cfs @ 12.16 hrs, Volume= 0.817 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 5P: Northern Wetland

Inflow Area = 8.105 ac, Inflow Depth = 2.84" for 10-Year Storm Event event
Inflow = 0.96 cfs @ 12.17 hrs, Volume= 1.920 af
Primary = 0.96 cfs @ 12.17 hrs, Volume= 1.920 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 2.17" for 10-Year Storm Event event
Inflow = 0.13 cfs @ 12.16 hrs, Volume= 0.026 af
Primary = 0.13 cfs @ 12.16 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 7P: Eastern Wetland

Inflow = 0.22 cfs @ 17.00 hrs, Volume= 0.218 af
Primary = 0.22 cfs @ 17.00 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Subcatchment 1S:

Runoff = 27.52 cfs @ 12.24 hrs, Volume= 2.996 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
333,035	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.1200	0.2		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.10"
0.2	75	0.1200	5.6		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
14.0					**Direct Entry, Swale Concentrated Flow--2fps**
18.3	125	Total			

Subcatchment 2S:

Runoff = 38.58 cfs @ 12.08 hrs, Volume= 2.923 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
324,842	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.2100	0.3		**Sheet Flow, Sheet Flow** n= 0.240 P2= 3.10"
0.6	250	0.2100	7.4		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
1.7					**Direct Entry, Concentrated Flow--2 fps**
5.6	300	Total			

Subcatchment 4S: Direct Slope Runoff

Runoff = 3.02 cfs @ 12.15 hrs, Volume= 0.269 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
91,175	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 5S: Direct Slope Runoff

Runoff = 0.93 cfs @ 12.15 hrs, Volume= 0.083 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
28,200	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 6S: Direct Slope Runoff

Runoff = 0.21 cfs @ 12.15 hrs, Volume= 0.019 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
6,395	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Pond 1P: Basin 1

Inflow Area = 7.645 ac, Inflow Depth = 4.70" for 25-Year Storm Event event
Inflow = 27.52 cfs @ 12.24 hrs, Volume= 2.996 af
Outflow = 0.26 cfs @ 24.19 hrs, Volume= 0.819 af, Atten= 99%, Lag= 717.2 min
Primary = 0.23 cfs @ 24.19 hrs, Volume= 0.719 af
Secondary = 0.03 cfs @ 24.19 hrs, Volume= 0.100 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 51.07' @ 24.19 hrs Surf.Area= 23,588 sf Storage= 122,072 cf
Plug-Flow detention time= 1,800.0 min calculated for 0.819 af (27% of inflow)
Center-of-Mass det. time= 1,624.8 min (2,407.6 - 782.8)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	**Custom Stage Data (Pyramidal)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
45.00	16,386	0	0	16,386
46.00	17,709	17,043	17,043	17,808
48.00	19,930	37,617	54,660	20,285
50.00	22,268	42,176	96,837	22,896
52.00	24,725	46,972	143,808	25,642
54.00	27,303	52,007	195,815	28,525
56.00	29,994	57,276	253,091	31,537
58.00	32,986	62,956	316,047	34,848
59.00	34,605	33,792	349,840	36,627

#	Routing	Invert	Outlet Devices
1	Device 4	52.50'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
2	Device 4	51.00'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Device 4	45.00'	**1.5" Vert. Orifice/Grate** C= 0.600
4	Primary	42.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 41.75' S= 0.0025 '/' n= 0.013 Cc= 0.900
5	Secondary	49.80'	**1.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	51.20'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.21 cfs @ 24.19 hrs HW=51.07' (Free Discharge)
└**4=Culvert** (Passes 0.21 cfs of 33.93 cfs potential flow)
  └**1=Orifice/Grate** (Controls 0.00 cfs)
  └**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.9 fps)
  └**3=Orifice/Grate** (Orifice Controls 0.14 cfs @ 11.8 fps)

Secondary OutFlow Max=0.03 cfs @ 24.19 hrs HW=51.07' (Free Discharge)
└**5=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.3 fps)
└**6=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Basin 2

Inflow Area = 7.457 ac, Inflow Depth = 4.70" for 25-Year Storm Event event
Inflow = 38.58 cfs @ 12.08 hrs, Volume= 2.923 af
Outflow = 1.92 cfs @ 14.16 hrs, Volume= 2.611 af, Atten= 95%, Lag= 124.8 min
Primary = 1.00 cfs @ 14.16 hrs, Volume= 2.055 af
Secondary = 0.92 cfs @ 14.16 hrs, Volume= 0.556 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf
Peak Elev= 52.88' @ 14.16 hrs Surf.Area= 20,252 sf Storage= 130,707 cf (87,314 cf above start)
Plug-Flow detention time= 1,837.4 min calculated for 1.615 af (55% of inflow)
Center-of-Mass det. time= 1,130.7 min (1,901.7 - 771.0)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	12,977	0	0
47.00	14,759	27,736	27,736
49.00	16,555	31,314	59,050
51.00	18,569	35,124	94,174
53.00	20,363	38,932	133,106
55.00	22,206	42,569	175,675

#	Routing	Invert	Outlet Devices
1	Device 3	48.00'	**3.0" Vert. Orifice/Grate** C= 0.600
2	Device 3	52.60'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Primary	45.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 44.00' S= 0.0100 '/' n= 0.012 Cc= 0.900
4	Device 3	54.00'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
5	Secondary	50.95'	**2.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	52.25'	**6.0" Vert. Orifice/Grate** C= 0.600
7	Secondary	52.60'	**6.0" Vert. Orifice/Grate** C= 0.600
8	Secondary	53.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.00 cfs @ 14.16 hrs HW=52.88' (Free Discharge)
- **3=Culvert** (Passes 1.00 cfs of 31.32 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 0.52 cfs @ 10.5 fps)
  - **2=Broad-Crested Rectangular Weir** (Weir Controls 0.48 cfs @ 1.7 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.92 cfs @ 14.16 hrs HW=52.88' (Free Discharge)
- **5=Orifice/Grate** (Orifice Controls 0.14 cfs @ 6.5 fps)
- **6=Orifice/Grate** (Orifice Controls 0.58 cfs @ 3.0 fps)
- **7=Orifice/Grate** (Orifice Controls 0.20 cfs @ 1.8 fps)
- **8=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 1.22" for 25-Year Storm Event event
Inflow = 3.11 cfs @ 12.15 hrs, Volume= 0.988 af
Primary = 3.11 cfs @ 12.15 hrs, Volume= 0.988 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 5P: Northern Wetland

Inflow Area = 8.105 ac, Inflow Depth = 3.17" for 25-Year Storm Event event
Inflow = 1.37 cfs @ 12.16 hrs, Volume= 2.138 af
Primary = 1.37 cfs @ 12.16 hrs, Volume= 2.138 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 9.72" for 25-Year Storm Event event
Inflow = 0.21 cfs @ 12.15 hrs, Volume= 0.119 af
Primary = 0.21 cfs @ 12.15 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 7P: Eastern Wetland

Inflow = 0.92 cfs @ 14.16 hrs, Volume= 0.556 af
Primary = 0.92 cfs @ 14.16 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Subcatchment 1S:

Runoff = 30.80 cfs @ 12.24 hrs, Volume= 3.375 af, Depth= 5.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Storm Event Rainfall=6.00"

Area (sf)	CN	Description
333,035	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.1200	0.2		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.10"
0.2	75	0.1200	5.6		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
14.0					**Direct Entry, Swale Concentrated Flow--2fps**
18.3	125	Total			

Subcatchment 2S:

Runoff = 43.16 cfs @ 12.08 hrs, Volume= 3.292 af, Depth= 5.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Storm Event Rainfall=6.00"

Area (sf)	CN	Description
324,842	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.2100	0.3		**Sheet Flow, Sheet Flow** n= 0.240 P2= 3.10"
0.6	250	0.2100	7.4		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
1.7					**Direct Entry, Concentrated Flow--2 fps**
5.6	300	Total			

Subcatchment 4S: Direct Slope Runoff

Runoff = 3.87 cfs @ 12.15 hrs, Volume= 0.335 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Storm Event Rainfall=6.00"

Area (sf)	CN	Description
91,175	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 5S: Direct Slope Runoff

Runoff = 1.20 cfs @ 12.15 hrs, Volume= 0.104 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Storm Event Rainfall=6.00"

Area (sf)	CN	Description
28,200	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 6S: Direct Slope Runoff

Runoff = 0.27 cfs @ 12.15 hrs, Volume= 0.024 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Storm Event Rainfall=6.00"

Area (sf)	CN	Description
6,395	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Pond 1P: Basin 1

Inflow Area = 7.645 ac, Inflow Depth = 5.30" for 50-Year Storm Event event
Inflow = 30.80 cfs @ 12.24 hrs, Volume= 3.375 af
Outflow = 0.70 cfs @ 18.69 hrs, Volume= 1.170 af, Atten= 98%, Lag= 387.0 min
Primary = 0.65 cfs @ 18.69 hrs, Volume= 1.049 af
Secondary = 0.06 cfs @ 18.69 hrs, Volume= 0.121 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 51.28' @ 18.69 hrs Surf.Area= 23,844 sf Storage= 126,973 cf
Plug-Flow detention time= 1,437.0 min calculated for 1.170 af (35% of inflow)
Center-of-Mass det. time= 1,283.7 min (2,063.6 - 779.9)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	**Custom Stage Data (Pyramidal)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
45.00	16,386	0	0	16,386
46.00	17,709	17,043	17,043	17,808
48.00	19,930	37,617	54,660	20,285
50.00	22,268	42,176	96,837	22,896
52.00	24,725	46,972	143,808	25,642
54.00	27,303	52,007	195,815	28,525
56.00	29,994	57,276	253,091	31,537
58.00	32,986	62,956	316,047	34,848
59.00	34,605	33,792	349,840	36,627

#	Routing	Invert	Outlet Devices
1	Device 4	52.50'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
2	Device 4	51.00'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Device 4	45.00'	**1.5" Vert. Orifice/Grate** C= 0.600
4	Primary	42.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 41.75' S= 0.0025 '/' n= 0.013 Cc= 0.900
5	Secondary	49.80'	**1.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	51.20'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.64 cfs @ 18.69 hrs HW=51.28' (Free Discharge)
- **4=Culvert** (Passes 0.64 cfs of 34.37 cfs potential flow)
  - **1=Orifice/Grate** (Controls 0.00 cfs)
  - **2=Broad-Crested Rectangular Weir** (Weir Controls 0.50 cfs @ 1.8 fps)
  - **3=Orifice/Grate** (Orifice Controls 0.15 cfs @ 12.0 fps)

Secondary OutFlow Max=0.05 cfs @ 18.69 hrs HW=51.28' (Free Discharge)
- **5=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.8 fps)
- **6=Orifice/Grate** (Orifice Controls 0.02 cfs @ 1.0 fps)

Pond 2P: Basin 2

Inflow Area = 7.457 ac, Inflow Depth = 5.30" for 50-Year Storm Event event
Inflow = 43.16 cfs @ 12.08 hrs, Volume= 3.292 af
Outflow = 3.11 cfs @ 13.21 hrs, Volume= 2.974 af, Atten= 93%, Lag= 68.0 min
Primary = 1.72 cfs @ 13.21 hrs, Volume= 2.252 af
Secondary = 1.39 cfs @ 13.21 hrs, Volume= 0.721 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf
Peak Elev= 53.11' @ 13.21 hrs Surf.Area= 20,461 sf Storage= 135,366 cf (91,973 cf above start)
Plug-Flow detention time= 1,593.4 min calculated for 1.977 af (60% of inflow)
Center-of-Mass det. time= 1,012.9 min (1,781.0 - 768.1)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	12,977	0	0
47.00	14,759	27,736	27,736
49.00	16,555	31,314	59,050
51.00	18,569	35,124	94,174
53.00	20,363	38,932	133,106
55.00	22,206	42,569	175,675

#	Routing	Invert	Outlet Devices
1	Device 3	48.00'	**3.0" Vert. Orifice/Grate** C= 0.600
2	Device 3	52.60'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Primary	45.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 44.00' S= 0.0100 '/' n= 0.012 Cc= 0.900
4	Device 3	54.00'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
5	Secondary	50.95'	**2.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	52.25'	**6.0" Vert. Orifice/Grate** C= 0.600
7	Secondary	52.60'	**6.0" Vert. Orifice/Grate** C= 0.600
8	Secondary	53.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.72 cfs @ 13.21 hrs HW=53.11' (Free Discharge)
- **3=Culvert** (Passes 1.72 cfs of 31.83 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 0.53 cfs @ 10.7 fps)
  - **2=Broad-Crested Rectangular Weir** (Weir Controls 1.19 cfs @ 2.3 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=1.39 cfs @ 13.21 hrs HW=53.11' (Free Discharge)
- **5=Orifice/Grate** (Orifice Controls 0.15 cfs @ 6.9 fps)
- **6=Orifice/Grate** (Orifice Controls 0.74 cfs @ 3.7 fps)
- **7=Orifice/Grate** (Orifice Controls 0.48 cfs @ 2.4 fps)
- **8=Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.1 fps)

Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 1.71" for 50-Year Storm Event event
Inflow = 3.97 cfs @ 12.15 hrs, Volume= 1.384 af
Primary = 3.97 cfs @ 12.15 hrs, Volume= 1.384 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 5P: Northern Wetland

Inflow Area = 8.105 ac, Inflow Depth = 3.49" for 50-Year Storm Event event
Inflow = 1.88 cfs @ 13.06 hrs, Volume= 2.356 af
Primary = 1.88 cfs @ 13.06 hrs, Volume= 2.356 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 11.82" for 50-Year Storm Event event
Inflow = 0.27 cfs @ 12.15 hrs, Volume= 0.145 af
Primary = 0.27 cfs @ 12.15 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 7P: Eastern Wetland

Inflow = 1.39 cfs @ 13.21 hrs, Volume= 0.721 af
Primary = 1.39 cfs @ 13.21 hrs, Volume= 0.721 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Subcatchment 1S:

Runoff = 32.98 cfs @ 12.24 hrs, Volume= 3.627 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Area (sf)	CN	Description
333,035	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.1200	0.2		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.10"
0.2	75	0.1200	5.6		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
14.0					**Direct Entry, Swale Concentrated Flow--2fps**
18.3	125	Total			

Subcatchment 2S:

Runoff = 46.21 cfs @ 12.08 hrs, Volume= 3.538 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Area (sf)	CN	Description
324,842	94	Landfill Cover

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.2100	0.3		**Sheet Flow, Sheet Flow** n= 0.240 P2= 3.10"
0.6	250	0.2100	7.4		**Shallow Concentrated Flow, Flow on Slope** Unpaved Kv= 16.1 fps
1.7					**Direct Entry, Concentrated Flow--2 fps**
5.6	300	Total			

Subcatchment 4S: Direct Slope Runoff

Runoff = 4.47 cfs @ 12.15 hrs, Volume= 0.382 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Area (sf)	CN	Description
91,175	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 5S: Direct Slope Runoff

Runoff = 1.38 cfs @ 12.15 hrs, Volume= 0.118 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Area (sf)	CN	Description
28,200	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 6S: Direct Slope Runoff

Runoff = 0.31 cfs @ 12.15 hrs, Volume= 0.027 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Area (sf)	CN	Description
6,395	60	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Pond 1P: Basin 1

Inflow Area = 7.645 ac, Inflow Depth = 5.69" for 100-Year Storm Event event
Inflow = 32.98 cfs @ 12.24 hrs, Volume= 3.627 af
Outflow = 1.17 cfs @ 16.69 hrs, Volume= 1.420 af, Atten= 96%, Lag= 267.2 min
Primary = 1.01 cfs @ 16.69 hrs, Volume= 1.261 af
Secondary = 0.16 cfs @ 16.69 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 51.41' @ 16.69 hrs Surf.Area= 23,996 sf Storage= 129,875 cf
Plug-Flow detention time= 1,248.4 min calculated for 1.420 af (39% of inflow)
Center-of-Mass det. time= 1,106.0 min (1,884.3 - 778.2)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	**Custom Stage Data (Pyramidal)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
45.00	16,386	0	0	16,386
46.00	17,709	17,043	17,043	17,808
48.00	19,930	37,617	54,660	20,285
50.00	22,268	42,176	96,837	22,896
52.00	24,725	46,972	143,808	25,642
54.00	27,303	52,007	195,815	28,525
56.00	29,994	57,276	253,091	31,537
58.00	32,986	62,956	316,047	34,848
59.00	34,605	33,792	349,840	36,627

#	Routing	Invert	Outlet Devices
1	Device 4	52.50'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
2	Device 4	51.00'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Device 4	45.00'	**1.5" Vert. Orifice/Grate** C= 0.600
4	Primary	42.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 41.75' S= 0.0025 '/' n= 0.013 Cc= 0.900
5	Secondary	49.80'	**1.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	51.20'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.00 cfs @ 16.69 hrs HW=51.41' (Free Discharge)
└**4=Culvert** (Passes 1.00 cfs of 34.63 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  ├**2=Broad-Crested Rectangular Weir** (Weir Controls 0.86 cfs @ 2.1 fps)
  └**3=Orifice/Grate** (Orifice Controls 0.15 cfs @ 12.1 fps)

Secondary OutFlow Max=0.15 cfs @ 16.69 hrs HW=51.41' (Free Discharge)
├**5=Orifice/Grate** (Orifice Controls 0.03 cfs @ 6.0 fps)
└**6=Orifice/Grate** (Orifice Controls 0.12 cfs @ 1.5 fps)

Pond 2P: Basin 2

Inflow Area = 7.457 ac, Inflow Depth = 5.69" for 100-Year Storm Event event
Inflow = 46.21 cfs @ 12.08 hrs, Volume= 3.538 af
Outflow = 4.21 cfs @ 12.91 hrs, Volume= 3.217 af, Atten= 91%, Lag= 50.1 min
Primary = 2.44 cfs @ 12.91 hrs, Volume= 2.396 af
Secondary = 1.78 cfs @ 12.91 hrs, Volume= 0.820 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf
Peak Elev= 53.29' @ 12.91 hrs Surf.Area= 20,632 sf Storage= 139,321 cf (95,928 cf above start)
Plug-Flow detention time= 1,458.9 min calculated for 2.220 af (63% of inflow)
Center-of-Mass det. time= 947.6 min (1,714.1 - 766.5)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	12,977	0	0
47.00	14,759	27,736	27,736
49.00	16,555	31,314	59,050
51.00	18,569	35,124	94,174
53.00	20,363	38,932	133,106
55.00	22,206	42,569	175,675

#	Routing	Invert	Outlet Devices
1	Device 3	48.00'	**3.0" Vert. Orifice/Grate** C= 0.600
2	Device 3	52.60'	**1.0' long Broad-Crested Rectangular Weir** Head (feet) 1.00 10.00 Coef. (English) 3.30 3.30
3	Primary	45.00'	**24.0" x 100.0' long Culvert** CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 44.00' S= 0.0100 '/' n= 0.012 Cc= 0.900
4	Device 3	54.00'	**36.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600
5	Secondary	50.95'	**2.0" Vert. Orifice/Grate** C= 0.600
6	Secondary	52.25'	**6.0" Vert. Orifice/Grate** C= 0.600
7	Secondary	52.60'	**6.0" Vert. Orifice/Grate** C= 0.600
8	Secondary	53.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=2.44 cfs @ 12.91 hrs HW=53.29' (Free Discharge)
- **3=Culvert** (Passes 2.44 cfs of 32.25 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 0.54 cfs @ 10.9 fps)
  - **2=Broad-Crested Rectangular Weir** (Weir Controls 1.90 cfs @ 2.7 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=1.78 cfs @ 12.91 hrs HW=53.29' (Free Discharge)
- **5=Orifice/Grate** (Orifice Controls 0.16 cfs @ 7.2 fps)
- **6=Orifice/Grate** (Orifice Controls 0.84 cfs @ 4.3 fps)
- **7=Orifice/Grate** (Orifice Controls 0.63 cfs @ 3.2 fps)
- **8=Orifice/Grate** (Orifice Controls 0.15 cfs @ 1.8 fps)

Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 2.02" for 100-Year Storm Event event
Inflow = 4.57 cfs @ 12.15 hrs, Volume= 1.643 af
Primary = 4.57 cfs @ 12.15 hrs, Volume= 1.643 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 5P: Northern Wetland

Inflow Area = 8.105 ac, Inflow Depth = 3.72" for 100-Year Storm Event event
Inflow = 2.67 cfs @ 12.83 hrs, Volume= 2.514 af
Primary = 2.67 cfs @ 12.83 hrs, Volume= 2.514 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 15.18" for 100-Year Storm Event event
Inflow = 0.31 cfs @ 12.15 hrs, Volume= 0.186 af
Primary = 0.31 cfs @ 12.15 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Pond 7P: Eastern Wetland

Inflow = 1.78 cfs @ 12.91 hrs, Volume= 0.820 af
Primary = 1.78 cfs @ 12.91 hrs, Volume= 0.820 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs